bluefish444
THE PROFESSIONALS' CHOICE

Epoch | Neutron
Epoch | 4K Neutron

End User Manual

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

Warranty

Bluefish444 warrants that this product will be free from defects in materials and workmanship for a period of two (2) years from the date of purchase. This warranty is provided only to customers who register the Bluefish444 serial number at the place nominated on the Bluefish444 homepage. If a product proves to be defective during the warranty period, Bluefish444, at its option, will either repair the defective product without charge for parts and labour, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, the customer must notify Bluefish444 of the defect before the expiration of the warranty period. The customer shall be responsible for packing and shipping the defective product to a designated service centre nominated by Bluefish444 with shipping charges prepaid. The customer will be responsible for shipping charges and duties payable on return of the repaired or replaced product to the customer's address. The customer must provide Bluefish444 with details of its nominated international courier company.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Bluefish444 shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than Bluefish444 authorised resellers to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage resulting or malfunction caused by the use of non Bluefish444 parts or supplies, d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product, or e) to repair or service a product that has been integrated and shipped as part of a workstation which may increase the risk of damage caused to the Bluefish444 card within the workstation during transit.

This warranty specifically shall not apply to Bluefish444 products purchased second hand.

This warranty is given by Bluefish444 in lieu of any other warranties, expressed or implied. Bluefish444's responsibility to repair or replace defective products is the whole and exclusive remedy provided to the customer for any indirect, special, incidental or consequential damages.

Products Covered

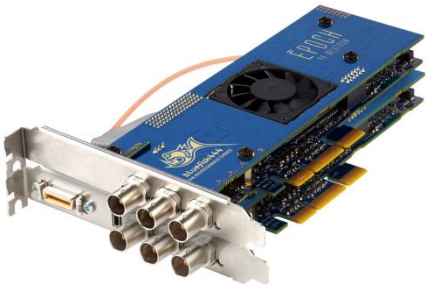
Epoch | Neutron LP
Low Profile no Breakout cable

Epoch | Neutron
Full Height with Breakout cable (See P8)

Epoch | 4K Neutron LP
Low Profile no Breakout cable

Epoch | 4K Neutron
Full Height with Breakout cable(See P8)

Epoch | 4K Neutron Turbo
Full Height with Breakout cable (See P8)



Features

Epoch | Neutron Features

- Three 1.5G SDI BNC
- 8/10/12-bit SDI I/O
- 3D Stereoscopic I/O
- Dual Link 4:4:4:4 RGBA, or 4:2:2:4 YUVA SDI I/O
- Three operating modes
    - One SDI In + One SDI Out (Second SDI out for Link B or Key channel)
    - Two SDI In
    - Two SDI Out
- HDMI 1.4a Output (HDMI Mini)
- Break Out connector and Cable (not standard with Low Profile variants)
    - RS422 (DB9)
    - 8 channels AES Input (4 x BNC)
    - 8 channels AES Output (4 x BNC)
    - 2 channels Analogue out -10dBu (Unbalanced, RCA)
    - Auxiliary Genlock
- Genlock Bi, Tri and Cross Lock
- Hardware Interlock (with optional Interlock Cable)
- Low Latency Hardware Keyer
- HANC, VANC, & VBI ancillary data I/O
- Fully Programmable 4 x 4 x 32-bit Colour Matrix
- 12-bit video signal path throughout
- Audio sample rate converters
- Full Duplex DMA data transfer bandwidth 1.1GB/s
- (MR2) Master Routing Resource
- ISIM (Input Stream integrity management)
- High Performance, Bypass Relays
- Multi-card support

Epoch | 4K Neutron Features

- Three 1.5G / 3G A or B SDI BNC
- 8/10/12-bit SDI I/O
- Dual Link/ 3G 4:4:4:4 RGBA, or 4:2:2:4 YUVA SDI I/O
- 3D Stereoscopic I/O
- Three operating modes
    - One SDI In + One SDI Out (Second SDI out for Link B or Key channel)
    - Two SDI In
    - Two SDI Out
- HDMI 1.4a Output (HDMI Mini)
- Break Out connector and Cable (not standard with Low Profile variants)
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    - 8 channels AES Input (4 x BNC)
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- Fully Programmable 4 x 4 x 32-bit Colour Matrix
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- Audio sample rate converters
- Full Duplex DMA data transfer bandwidth 1.1GB/s
- (MR2) Master Routing Resource
- ISIM (Input Stream integrity management)
- High Performance, 3G Bypass Relays
- Multi-card support

Neutron Range Feature Comparison

	Epoch | Neutron	Epoch | Neutron LP	Epoch | 4K Neutron	Epoch | 4K Neutron LP	Epoch | 4K Neutron Turbo
SD	YES	YES	YES	YES	YES
HD 1.5G	YES	YES	YES	YES	YES
3G (A+B)	NO	NO	YES	YES	YES
Dual Link 1.5G	YES	YES	YES	YES	YES
Dual Link 3G (A+B)	NO	NO	YES	YES	YES
Quad Link 1.5G	NO	NO	NO	NO	YES
Quad Link 3G (A+B)	NO	NO	NO	NO	YES
SD/HD/2K HDMI	YES	YES	YES	YES	YES
SD/HD/2K/4K HDMI	NO	NO	YES	YES	YES
Hardware Keyer	YES	YES	YES	YES	YES
Multi-card Interlock	YES	YES	YES	YES	YES
Breakout Cable *AES Audio I/O* *Analogue Audio Monitoring* *RS422* *Auxiliary Genlock*	YES	NO *second shield available	YES	NO *second shield available	YES

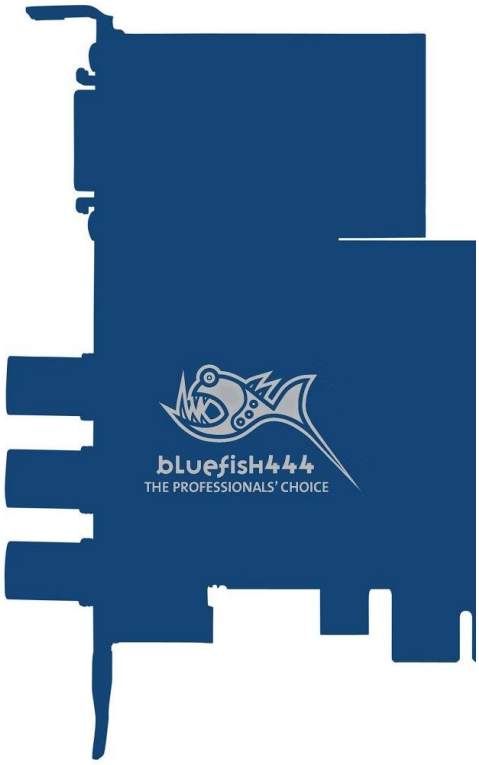
Neutron range supported video modes

	Epoch | Neutron	Epoch | 4K Neutron	Epoch | 4K Neutron Turbo
SD/HD/2K YUV SDI Video Modes			
720x486i @ 29.97fps NTSC	Yes	Yes	Yes
720x576i @ 25fps PAL	Yes	Yes	Yes
1280x720p @ 23.976, 24, 25, 29.97, 30, 50, 59.94, 60fps	Yes	Yes	Yes
1920x1080i @ 25, 29.97, 30fps	Yes	Yes	Yes
1920x1080P/PsF @ 23.976, 24, 25, 29.97, 30fps	Yes	Yes	Yes
1920x1080p/PsF @ 48, 50, 59.94, 60fps	Yes*	Yes	Yes
1920x1080P/PsF @ 23.976, 24, 25, 29.97, 30fps	Yes	Yes	Yes
2048X1080p/PsF @ 23.976, 24, 25, 29.97, 30fps	Yes	Yes	Yes
2048X1080P/PsF @ 48, 50, 59.94, 60fps	Yes*	Yes	Yes
SD/HD/2K RGB SDI Video Modes			
720x486i @ 29.97fps NTSC	Yes*	Yes	Yes
720x576i @ 25fps PAL	Yes*	Yes	Yes
1920x1080i @ 25, 29.97, 30fps	Yes*	Yes	Yes
1920x1080P/PsF @ 23.976, 24, 25, 29.97, 30fps	Yes*	Yes	Yes
2048X1080p/PsF @ 23.976, 24, 25, 29.97, 30fps	Yes*	Yes	Yes
4K YUV SDI Video Modes SMPTE 2036-1			
3840 x 2160p @ 23.976, 24, 25, 29.97, 30fps	No	yes**	Yes***
3840x2160p @ 48, 50, 59.94, 60fps	No	No	Yes***
4096 x 2160p @ 23.976, 24, 25, 29.97, 30fps	No	yes**	Yes***
4096 x 2160p @ 48, 50, 59.94, 60fps	No	No	Yes***
4K RGB SDI Video Modes SMPTE 2036-1			
3840 x 2160p @ 23.976, 24, 25, 29.97, 30fps	No	No	Yes***
4096 x 2160p @ 23.976, 24, 25, 29.97, 30fps	No	No	Yes***

*Via Dual Link 1.5G only
**4K SDI support provided by Dual Link 3G level B (2 BNC)
***4K SDI support provided by Quad Link SDI (4 BNC)

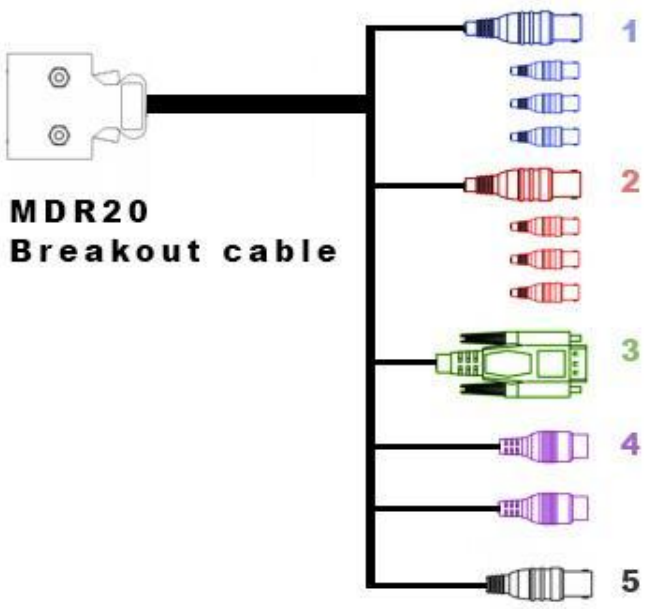
Neutron range connectors

Connector	TWO In	TWO Out	1 In 1 Out
MDR20 Breakout Connector			
HDMI	NA	HDMI out	HDMI out
1	Input A	Output A	Output A
2	Input B	Output B	Input A
3	NA	Genlock	Genlock



Breakout cable

Neutron cards support additional IO beyond SDI through the use of the supplied breakout cable. Low Profile variants do not come with Breakout support as standard.



8 channel AES Audio Outputs via 4 BNC connectors

8 channel AES Audio Inputs via 4 BNC connectors

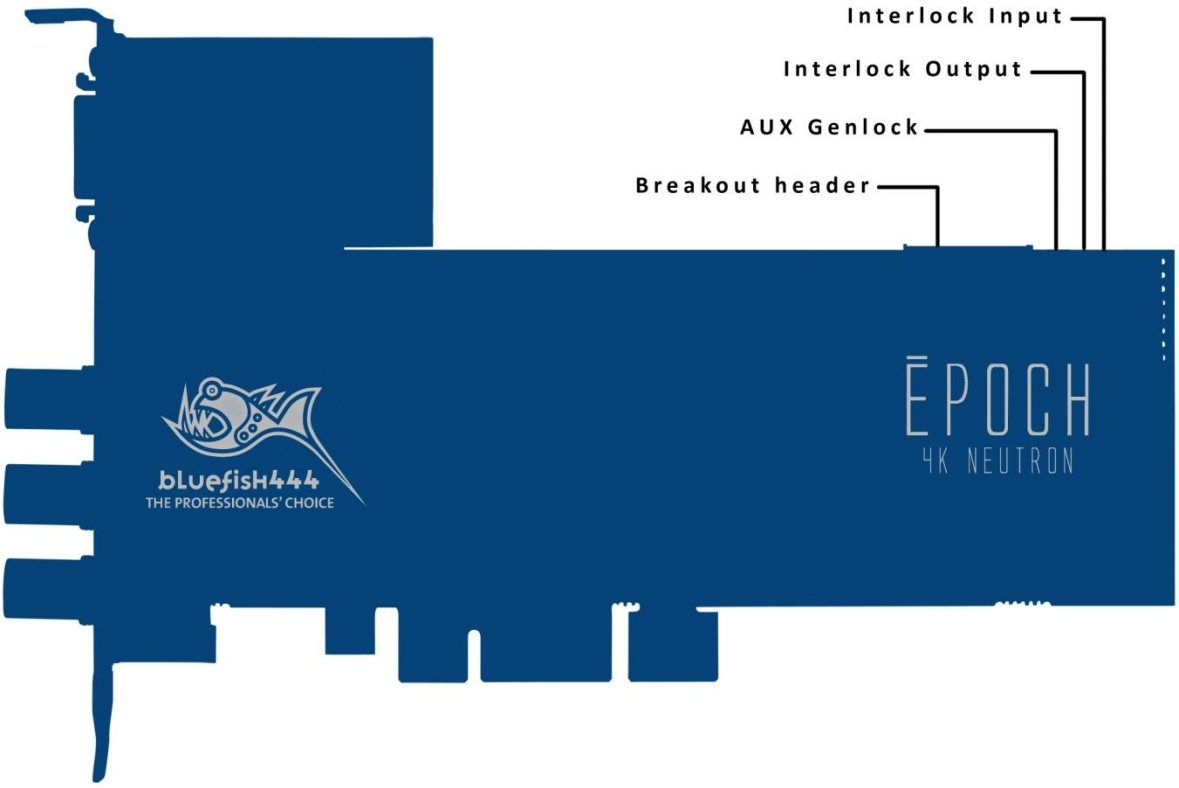
RS422 Machine Control

2 channel Analogue Audio Output via 2 RCA connectors

Auxiliary Genlock BNC

Auxiliary Genlock and Interlock connections

Neutron cards feature an additional Auxiliary Genlock connector located internally on the top edge of the card. The Auxiliary Genlock input connects to the MDR20 Breakout.



Multiple Neutron cards may be locked together sharing a common clock. This is achieved by attaching the ***Interlock cable*** (Part Number CAB_ILOK) from the ***Interlock Output*** of one card to the ***Interlock Input*** of additional card(s).

Installation

Prepare your system

Ensure you have installed the latest BIOS, operating system, OS updates and drivers for your system and that it operates normally with your software applications.

Please refer to the certified hardware guide section or the readme document for more information.

http://www.bluefish444.com/support/compatibility/hardware/

Install 3rd party applications

Supported 3rd party applications must be pre-installed before running the Bluefish444 installer. Supported applications installed after Bluefish444 software installation, will require a re-installation of the Bluefish444 installer.

Adobe Creative Cloud™

AVID Media Composer™ 6.x, 6.5.x, 7.x, 7.5.x, 8.x

Drastic Technologies Drastic Preview Pro™

Drastic Technologies 4K Scope™

Drastic Technologies Media NXS™

Telestream Wirecast Pro™

The Foundry Nuke™

Bluefish444 Symmetry™

Bluefish444 Fluid ingeSTore™

Install QuickTime player

Download and install the latest QuickTime installer available at the following site.

http://www.apple.com/quicktime/download/

Bluefish444 card installation

Place your system in an easily accessible position with sufficient lighting. It is not recommend that you insert the card in an awkward position as this will increase the risk of a poorly contacted or incorrectly installed card.

Ensure your hands are clean and free of dirt and fluid.

Make sure you are earthed and discharge any static build up using a personal earthing strap. Avoid contact with components on the main PCB and never touch the PCI slot Gold mating edge.

- Remove your system's protective case.
- Remove the power cable from your system
- Identify a free PCI-E x4 lane GEN 1/2/3 slot(check your hardware configuration or contact your hardware supplier)
- Hold the card by the top of the PCI shield and at the top of the PCB at the opposite end of the PCI shield (this will reduce any chance of damage to the bluefish444 card circuitry).
- Insert the card into the correctly chosen slot by firmly pressing down on the metal PCI shield and the edge of the PCB.
- Secure the card with a screw or PCI latch.
- If using multiple cards attach interlock cable as required (See Page 8)
- Replace the system chassis cover and connect the power to your system.

Bluefish444 software installation

Key points to remember when you run the Bluefish444 installer:

- You must have Administrator privileges
- Power Saving features should be disabled
- Always uninstall any previous installer before running the installation program
- Always shut down your system, after installing the drivers
- Always run the installer if you change Bluefish444 hardware
- Always read the latest release notes
- Always install 3rd party software before installing Bluefish444 software

1. With the Bluefish444 card physically installed, turn on your system.
2. You may be presented with "New Hardware Found" dialog box. Cancel/Close this dialog
3. Run the latest Bluefish444 installer available at www.bluefish444.com
4. Follow the installer on-screen instructions
   please ensure you read the license agreement before agreeing to it.
   If you do not agree to the license agreement installation will not continue
5. select/de-select 3rd party application plug-ins
6. Select the desired Operating Mode (firmware type) and update
7. Allow redistributables to be installed as required
8. When installation finished, shut-down your system
9. *Note* after a Firmware update with Windows 8 shutdown the system then Restart Windows once more to complete Driver configuration

Uninstall Bluefish4444 Software

1. Make sure you have closed all applications.
2. In the Windows Control Panel, go to "Add or Remove Programs" (XP) or "Uninstall or change program" (Win7)
3. Select Bluefish444 installer, choose uninstall

3rd Party Applications

Bluefish444 provide individual documentation for common 3rd party applications including:

- Adobe CC
- AVID Media Composer
- Assimilate SCRATCH
- Symmetry

Documents can be found in the Bluefish444 Installation directory.

Bluefish444 Support

Common questions that will be asked when contacting Bluefish444 support are:

- Please provide system information (run CMD > msinfo32.exe)
- Bluefish444 Installer version?
- Process that is failing/ or giving you trouble?
    - Actual Result
    - Expected result
    - Provide steps for us to reproduce
- Please provide a screenshot of c:\Program Files(x86)\BlueFish444\Symmetry\BlueInfo.exe
- SDI Sources and Destinations also in use?
- Is it possible to verify the behaviour in another application?

Support Resources

Hardware compatibility Guide:

This site has detailed information on tested and certified hardware categorized by motherboards, systems and integrators.

http://www.bluefish444.com/support/compatibility/hardware/

Software compatibility guide:

Current list of released retail software that is compatible with the Bluefish444 product range.

Refer to this site often as new supported products are frequently released:

http://www.bluefish444.com/support/compatibility/software/

For phone support you must register your product online at:

http://www.bluefish444.com/products/warranty/register.asp

International Support Contacts

Australia - BlueFish444 (Head Office)
17b Market Street,
South Melbourne
Victoria, 3205
Australia
Telephone: +61 (3) 9682 9477
Facsimile: +61 (3) 9682 9466
Email:support@bluefish444.com
Web: www.bluefish444.com

Europe - Bluefish444 Europe Ltd.
Joel Street Farm, Joel Street,
Pinner, Middlesex,
HA5 2PD.
United Kingdom
Telephone: +44 (0)20 8429 8345
Facsimile: +44 (0)20 8866 8207
Email: jfall@bluefish444Europe
Web: www.bluefish444europe.com

South Korea - DVNest
505 Ace Highend Tower 8th,
345-4 Gasan Dong,
Geumcheon Ku, Seoul
South Korea
Telephone: +82 1544 5596
Email: manager@dvnest.com
Web: www.dvnest.com

China - UBS Consulting
601, Block 4, Wanda Square.
93 Jianguo Road
100022 Beijing P.R, China
Telephone: +86 (10) 5820 6929,
+86 1350 1287 726
Facsimile: +86 (10) 5820 6930
Email: services@ubschina.com
Web: www.ubschina.com/bluefish

Japan - Crescent Video
3-2-12 Midori,
Sumida
Tokyo 130-0021
Japan
Telephone: +81-3-5638-1818
Facsimile: +81-3-5638-1819
Email: kotani@crescentvideo.co.jp
Web: www.crescentinc.co.jp

North America – Bluefish444 USA
Telephone: 1-617-418 1792
Email: support-usa@bluefish444.com